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Method of, and apparatus for, handling blanks, in particular coupons

P a t e n t c l a i m s

1. Method of handling blanks, in particular of supplying printing carriers, coupons (11, 12) or the like as an insert to a pack (10) or cigarette pack, **characterized by** the following features:

- a) the coupons (11, 12) are supplied in adjacent pairs in each case, in particular on account of a double coupon (15) being severed,
- b) the coupons (11, 12) are transported in the region of a packing machine by a coupon conveyor (17), namely to a (coupon) feeder (20, 21) or to a coupon magazine (22),
- c) the coupons (11, 12) arriving in pairs are separated during transportation such that individual coupons (11, 12) are supplied one after the other to the feeder (20, 21) or coupon magazine (22).

2. Method according to Claim 1, **characterized in that** the simultaneously supplied coupons (11, 12) are transported at initially different speeds such that a spacing is produced in the conveying direction between the simultaneously arriving coupons (11, 12), and that the two coupons (11, 12) are transported further one after the other – at a distance from one another.

3. Method according to Claim 1, **characterized in that** the in particular horizontally oriented coupons (11, 12), during transportation by the coupon conveyor (17), are turned

through 90° and/or set in an upright position and, thereafter, are deflected in respect to the movement direction, in particular through (approximately) 90°.

4. Method according to Claim 3, **characterized in that**, following deflection in the region of the coupon conveyor (17), the coupons (11, 12) are moved back, by renewed turning, into a horizontal alignment, in particular for transfer to the coupon magazine or to a feeder (21).

5. Method according to Claim 1, **characterized in that**, at the end of the coupon conveyor, the coupons (11, 12) are transferred directly to a following feeder (21) or, by transverse displacement in one direction and the other, are transferred to two parallel feeders (21) or shafts (42, 43) of the coupon magazine (22).

6. Method according to Claim 1, **characterized in that** the coupons (11, 12) are finished during transport, in particular stabilized with respect to any folding, specifically by pressure-exerting elements which act upon the coupons (11, 12) as they are transported, preferably in the region of folding edges.

7. Apparatus for handling blanks, in particular for supplying printing carriers, coupons (11, 12) or the like as an insert to a pack (10), in particular cigarette pack, the packs (10) being transported preferably continuously along a conveying path (19) in the region of a packaging machine for applying an outer wrapper, **characterized by** the following features:

- a) the coupons (11, 12) can be supplied lying next to one another in pairs to a coupon conveyor (17), which transports the coupons (11, 12) to a feeder (20, 21) in order to be applied to a top side (13) of the packs (10),
- b) during transportation by the coupon conveyor (17), the coupons (11, 12) pass one after the other through a separating subassembly, namely an intermediate conveyor (27), by means of which the coupons (11, 12), which are spaced apart from one another in the conveying direction, are supplied one after the other to a further conveyor - connection conveyor (28).

8. Apparatus according to Claim 7, **characterized in that** the coupons (11, 12) arriving in pairs can be transported, in the first instance, along two paths in the region of the coupon conveyor (17), in particular by means of receiving belts (23, 24) which are

driven at different conveying speeds, such that the originally adjacent coupons (11, 12) are offset in the conveying direction during transportation.

9. Apparatus according to Claim 7, **characterized in that** it is possible to supply the coupons (11, 12), which are initially conveyed one beside the other in the region of the coupon conveyor (17), in particular by receiving belts (23, 24), in the region of a converging member, namely in the region of an intermediate conveyor (27) with converging conveying paths for the coupons (11, 12), to a further conveyor which is common to both coupons (11, 12), namely to a connection conveyor (28).

10. Apparatus according to Claim 7, **characterized in that** the horizontally arriving coupons (11, 12), during transportation by the coupon conveyor (17), can be rotated through 90° and/or turned into an upright position – as seen in the transporting direction – in particular by twisted conveying belts, namely receiving means (23, 24), of which the deflecting rollers (25, 26) are arranged with axes of rotation offset through 90°.

11. Apparatus according to Claim 10, **characterized in that**, once they have been set in an upright position, the coupons (11, 12) can be deflected in respect to the conveying direction, in particular through 90° in a direction transverse to the incoming conveying direction, by a deflecting conveyor (32) forming part of the coupon conveyor (17).

12. Apparatus according to Claim 10 or 11, **characterized in that**, before being transferred to feeder (21) or the coupon magazine (22), the coupons (11, 12) can be turned again through 90°, preferably into a horizontal plane.

13. Apparatus according to Claim 7, **characterized in that** the coupon magazine (22), which is arranged at the end of the coupon conveyor (17), has two laterally offset shafts (42, 43) for in each case one coupon stack (44), and in that a coupon distributor (45) is arranged between the two shafts (42, 43), directly following the coupon conveyor (17), said distributor supplying the incoming coupons (11, 12) to the shafts (42, 43), by a transverse conveying movement, in accordance with the degree of filling of said shafts.

14. Apparatus according to Claim 13, **characterized in that** the coupon distributor (45) comprises preferably two conveying rollers (46, 47) which are arranged one above the other and supply the coupons (11, 12) to one shaft (42, 43) or the other by rotary movement, the conveying rollers (46, 47) fixing the coupons (11, 12) on the circumference via bores (49).

15. Apparatus according to Claim 7, **characterized in that** the feeder (21), which directly follows the coupon conveyor, comprises a feeder belt (52) which is angled a number of times over deflecting rollers to form a (top) receiving leg (58), a transversely
5 directed intermediate leg (59) and a transfer leg (60) which, again, is directed transversely, the latter leg being oriented at an acute angle to the conveying path (19) in the conveying direction of the packs (10).

16. Apparatus according to Claim 15, **characterized in that** the coupons (11, 12) butt
10 against a conveying strand of the feeder belt (52) and are held in abutment against the feeder belt (52) by a fixed guide (61) which follows the contour of the feeder (21), it being possible for the coupons (11, 12) to be transported with precise relative positioning by carry-along elements (53).

17. Apparatus according to claim 7, **characterized in that** pressure-exerting elements
15 for stabilizing foldings in the coupons (11, 12) are arranged in the transport path of the coupons (11, 12), in particular pressure discs (67, 68) at either side of a belt conveyor, in particularly in the region of deflection wheels (69, 70) of a transfer conveyor (54) of the coupons (11, 12).

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